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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,701	07/10/2003	B. Ryland Wiggs	N9556-MJP	1567

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WADDEY & PATTERSON
414 UNION STREET, SUITE 2020
BANK OF AMERICA PLAZA
NASHVILLE, TN 37219

EXAMINER

ALI, MOHAMMAD M

ART UNIT PAPER NUMBER

3744

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,701

Applicant(s)

WIGGS, B. RYLAND

Examiner

Mohammad Ali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-58 is/are pending in the application.
- 4a) Of the above claim(s) 46-58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 38-42 and 44 is/are rejected.
- 7) ☒ Claim(s) 43 and 45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 0107 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/18/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Applicant's election without traverse of 07/19/04 in the reply filed on 10/22/04 is acknowledged. Claims 46-58 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/22/04.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 38-40 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Henderson (4,062,489). Henderson discloses a solar-geothermal heat system comprising a solar collector 10 and the heat acquired by the solar collector 10 is conveyed by means of fluid tubing/conduit 35/36; and the solar heat is transferred by a solar heat to direct expansion system refrigerant fluid heat exchange means 46/20 to the refrigerant fluid in a direct expansion system, the tubing 35/36 is insulated by insulation 37, a pump 50 is provided for operating or terminating the operation of solar heat transfer system. While considering the direct expansion system refrigerant fluid heat exchange means the whole tank 20 is considered as the heat exchanger and the tank 20 is inherently insulated to serve its intended purpose. See Fig. 1. Regarding phrase, "to the refrigerant fluid immediately prior to the refrigerant fluid entering the sub-

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surface geothermal heat transfer environment of the direct expansion system” for claim 39 and the phrase, “solar heat transfer termination means is only activated when the direct expansion system is operating in the cooling mode, and during periods of time when supplemental heat supplied by the solar heat collector is at a lower temperature than the maximum temperature is the geothermal heat exchange sub-surface environment, and which solar heat transfer termination means is otherwise deactivated” for claim 42 are the functional recitation of heat exchange means and the solar heat transfer termination and they have no weight of patentability.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henderson. Henderson discloses the invention substantially as claimed as stated above. However, Henderson does not disclose the refrigerant fluid heat exchange means at an elevation above the solar heat collector. Choosing the location of the refrigerant fluid heat exchanger with respect to the solar heat collector is an obvious choice of an individual skilled in the art since there is no criticality or unexpected result from it.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henderson in view of Marukasa (JP02000199697A). Henderson discloses the invention

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substantially as claimed as stated above. However, Henderson does not disclose an inverted U bend. Marukasa teaches the use of an inverted U bend in a refrigerant tubing for the purpose of having a desired shape of the refrigerant tubing. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the solar-geothermal heat system of Henderson in view of Marukasa such that a inverted u bent could be provided in order to have a desired shape of the refrigerant tubing.

Allowable Subject Matter

Claims 43 and 45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is 703-308-5032. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Esquivel Denise can be reached on 703-308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mohammad M. Ali
November 3, 2004